

222 bowl has four equally spaced lugs which are pierced vertically. Slender ropes of equal length pass through these and are tied together above the bowl, where a single long rope is attached. Sometimes the bowl is encased in rawhide, as a precaution against breakage. A few specimens are provided with flat wooden covers which slide on the four small ropes. The honey bowl is hung from a limb beside the hive and lowered to the ground when full.

257 The comb is taken to the village, where it is put into a sack of coarse matting (Fig. 4, b) and the honey squeezed out by means of a press made from a split log (Fig. 4, c). The sack is inserted between the halves and the projecting ends of the press wrapped with a rope. A short stick is then passed through the rope and pressure exerted by torsion. The solid end of the press is fastened to a post or the corner of a house. The honey is collected in a bowl below (Fig. 4, f).

After pressing, the honey is strained through cloth or matting and stored in deep, oval wooden boxes (Fig. 4, a). The sides of the box are cut from a single piece. The bottom is a separate piece, accurately fitted, inset, and cemented in place with beeswax or gum. There is a tight-fitting lid. The honey boxes of the Zafimaniry gens are often elaborately carved. Identical honey boxes are used by the Betsileo and Imerina, but are rare or lacking in other areas.

263 Honey is considered best after it has begun to thicken and crystallize and it is usually kept for some weeks or months before being used. It is used for sweetening other foods and also eaten alone, like candy. Much of it is employed in the manufacture of *betsabetsa* ("honey beer") and rum.

237 After the honey has been pressed out, the residue is boiled and strained to collect the wax. This is poured into shallow bowls, where it solidifies. Most of the wax is exported. The natives themselves employ a little of it for coating blow-guns to make them airtight, for cementing the bottoms of wooden boxes, etc., but it is not important in their technology.

WILD VEGETABLE FOODS

222 The Tanala are familiar with a great variety of edible wild roots and fruits. These are gathered in their season, but are of little importance except in times of food shortage. At most, they afford a little variety to the standard diet of rice and boiled greens. The principal wild fruits are the *voasindriry*, *voandroy*, *voandongozo* and *via*. Wild roots include the *orylata*, *orytreta*, *matika*, *antady*, *hofika*, *pikopiko*, and *hapy*.

372 is extremely rare, the body of the box is flat on one side and convex
415 on the other and tapers to a point at the bottom. Tinder boxes
[531] are rarely if ever carved, but those of the first type are sometimes
decorated with inset studs of metal or bone. They are always
finely finished and with use and repeated oiling acquire a high polish.
When traveling they are worn hanging on the breast or, rarely, at
the belt.

281 Rawhide tinder boxes are rarely used by the northern Tanala,
415 only two examples having been seen. They are made from long,
rectangular strips of hide with the hair removed. While the hide
is still soft, two-thirds of the strip is folded back upon itself and sewn
together along the edges with a thong, forming a pouch. The remain-
ing third is then bent down over this as a cover. Slits are cut in
the rear of the pouch, or strips are sewn on, so that it can be strung
[531] on the belt. The flap is usually decorated with tooled designs
(Fig. 5, a). This type seems to be peculiar to the Tanala, but hide
tinder boxes of a different form are used by the Bara and other
southern tribes.

321 The horn tinder boxes are made from sections of cow horn 8 to
415 18 inches long. The edges of the open end are cut off smoothly
except at the inside of the horn's curve, where a rectangular pro-
jection about 1 inch wide and $\frac{1}{2}$ inch to 1 inch long is left. An oval
piece of wood, which has on one side a projection corresponding to
that on the horn, is fitted into the opening and fastened solidly
with wooden or horn pins. In the center of this there is an oval
opening about 1 inch in diameter which is closed by a close fitting
cork or stopper. This stopper is attached to the projection on the
side of the horn by a short piece of cord. Heavier cords are attached
to the horn at both ends so that the whole can be worn as a belt,
the curve of the horn fitting against the wearer's side. The cords
[531] are of braided raffia (Fig. 5, e). Such boxes are rarely decorated
but in one specimen the end of the horn has been cut into a series
of knobs. Similar boxes are used by practically all the Madagascar
tribes.

281 The hollow belts are made from the skin of a cow's tail drawn
415 off whole. The skin is dried and flattened, the hair being left on.
The smaller end is sewn up and a loop of hide attached. The larger
end is pierced near either side. A wide thong is split for several
inches and the ends of the split portion passed through the holes
in the belt and fastened to either end of a flat strip of bamboo. The
other end of this thong and the loop sewn to the smaller end of the

415 are nearly 3 feet long. At the present time, families often have one or two wooden bowls, but these have mostly been gotten in trade. White enamel ware and metal spoons are just beginning to come into common use.

The Zafimaniry do not use mats for serving rice and have no leaf dishes or spoons. Small, finely woven baskets are sometimes used for individual servings of rice, but this is not common. All food is regularly served in wooden bowls or platters. These vary considerably in size and depth and may be either round or oval (Fig. 7, e, f, g, h). Bowls sometimes have a low base. In several specimens there is a small lug protruding from one side, just below the rim. A loop of cord is passed through this and the bowl is hung up by it when not in use. Oblong bowls or platters, with four short legs, are used for cutting up and serving meat (Fig. 8, a, b).

412 One of the most characteristic Zafimaniry utensils is that used for grating ginger root. It is long and narrow, with four short legs and a spout (Fig. 8, d). In the center of the bottom, a number of [53] small bone studs are set in the form of a rosette. The shape is said to represent a crocodile, but none of my informants knew the significance of this. The ginger graters are used in preparing some kinds of medicine.

415 Two unique specimens were collected: a small platter with a design carved on the bottom in relief (Fig. 8, c), and a small, finely [53] made bowl with a close-fitting cover and cords for suspension. The latter was used as a trinket box (Fig. 8, e).

The Zafimaniry use small wooden spoons. The shape is much like that of European ones, except for the decorative handle (Fig. 7, a, b, c). Horn and bone spoons seem to be unknown, although they are commonly used by the Betsileo.

[321] The horns of cattle are used as drinking and libation cups. The finest, used in ceremonies, are nearly 2 feet long. The horns are scraped and polished and their tips are sometimes carved into simple forms. One specimen, used as a libation horn, has a design of small circles incised a short distance below the rim (Fig. 9, a, b).

All the Tanala use sections of large bamboo, from 6 to 10 feet long, as water bottles. The septa are burned out with a hot iron. The open end of the bottle is usually cut at an angle, so as to form a sort of spout. The bottle is usually kept leaning against the wall in a corner of the house. When water is needed, one person tilts it while another holds a bowl below.

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the metal is hot. Some knife and meat hook handles terminate in spiral antennae (Figs. 1, f; 5, g). Iron is never inlaid with other metals. 325 [531]

There are very few Tanala silversmiths, most of their ornaments being bought from the Betsileo. The ornaments are usually made from French five franc pieces and, at the time of my visit, the government had prohibited silver working as part of a campaign to introduce paper money. Because of this, the silversmiths carried on their work surreptitiously and I could learn nothing of their methods. 326 177

WOOD WORKING

With the exception of the Zafimaniry gens, the Tanala are rather inferior wood workers. Their tools consist of the axe, chisel, knife, plane, drill, and two types of gouge. Adzes are unknown and saws were unknown until introduced by Europeans. They are still rarely used. 322 412

The axe (*antsi*) is used both as a tool and as a weapon. All native men carry one when traveling. The blade is shaped like that of an American cleaver, flat, with a square end and a straight or slightly curved cutting edge 4 to 6 inches long (Fig. 10, d). It has a straight, horizontal tang about 3 inches long which is inserted in a straight wooden handle 18 inches to 2 feet long and about 1 inch in diameter. In mounting the blade the tang is heated red hot and used to burn a hole of the proper size in the end of the handle. When this is deep enough the tang is fixed in it with a strong vegetable cement, made from a berry. The handle is then reinforced about the tang with a metal ferrule or a band of rawhide taken from a cow's tail and slipped on wet.

Chisels are of solid iron and are shaped much like our own cold chisels. They are used for fine work in hollowing wooden utensils and in dressing joints in timbers (Fig. 10, f).

Planes are shaped much like the small planes used by our own carpenters (Fig. 11, f). The plane-iron tapers to a point, which is usually recurved. It is held in place by a wooden wedge. The Zafimaniry often use plane-irons with a fluted edge (Fig. 11, e), producing a corrugated surface. Planes are used for dressing house timbers and the outside of large wooden utensils, especially boxes.

Drills are identical with those already described under Fire Making except that they are fitted with chisel-shaped iron bits. They are rarely used in wood working, small perforations usually being made with a hot iron.

322 Large, heavy gouges are used for hollowing out large boxes and
412 canoes. The blade is provided with a socket by which it is fitted
on the end of a heavy, straight wooden handle, like a spade handle.
This gouge is swung with both hands, like the native spade. The
head of the gouge is usually carried in a rawhide sheath (Fig. 11, c).
Small gouges with curved blades are used for hollowing out spoons
and other small utensils (Fig. 10, g). They are sometimes provided
with a long handle which is gripped in the arm pit so that the blade is
held rigid while the utensil is pressed and turned against it.

All wood working tools are sharpened with whetstones, which
are carried on the belt in a hide sheath (Fig. 10, h).

313 The greater part of the Tanala territory is heavily forested, but
because of their wasteful agricultural methods large timber is becoming
scarce. It is often necessary to go several hours' march from a
village to find trees suitable for making large utensils, canoes, and
house timbers. In such cases the workmen build rude shelters at
the place and live there until the work is finished.

[182] It is considered wise to begin the felling of large trees on an
auspicious day. It is not obligatory, but if this is neglected there
may be accidents. If the trees selected are in a *zintana* ("place inhab-
ited by spirits") the workmen make a small sacrifice before the
felling begins and warn the spirits to go away so that they will not
be injured. The trees are felled with axes, never with fire, and are
cut off 2 to 3 feet above the ground. The Tanala apparently make
no use of wedges or other appliances for splitting the wood. Timbers,
utensils, etc., are hewn out bodily and brought to nearly their final
form on the spot, to save labor in transport. They are then carried
to the village to be finished at leisure. The Tanala never work
with seasoned wood if green wood is obtainable.

322 After objects have been roughed out with the axe and heavy
gouge they are dressed with planes and knives. If a very smooth
surface is desired, the object is gone over with a heavy iron rasp of
European manufacture, and the surface then rubbed down with a
slightly rough stone or with damp sand on a piece of hide. Final
smoothing is done with leaves. Wooden utensils are never polished
intentionally, although they may become glossy through use.

322 The Zafimaniry do a good deal of wood carving. Their carving
531 tools are knives and small chisels and gouges (Fig. 10, j), used without
mallets. There is no carving in the round. The designs are incised
after the surface has been rubbed smooth. Oval wooden boxes,
beds and the timbers and doors of houses are the objects most

322 commonly decorated. The house carvings are made after the house
 531 has been erected and the owner will work on them intermittently
 for years.

The other Tanala gentes carve very little. Some of the Menabe blacken the edges of wooden bowls and sections on the handles of wooden ladles by charring them with a hot iron and rubbing the surface smooth. Simple designs are then cut through the black layer into the underlying white wood (Fig. 7, d). Such decorations are very striking when the utensil is new, but soon disappear with use. A similar technique is used by the tribes of the southeast coast and those of the extreme south, and is also common in Africa. It seems to be a recent introduction among the Tanala.

The handles of wooden spoons are given ornamental shapes and are sometimes decorated with series of small incised circles. This form of decoration is much commoner on horn and bone and the method of making the circles is described in that section.

WORK IN HORN, BONE AND HIDE

321 Animal products are of little importance in Tanala industry. All
 415 the horn, bone and hide used is obtained from cattle. Cow horns are occasionally used as containers for fire making sets (Fig. 5, e) and charms (Fig. 23, e). There are also a few horn snuff bottles (Fig. 9, j) and small horn boxes, used as snuff boxes or purses (Fig. 9, f). Only the Zafimaniry use horns as drinking and libation cups (Fig. 9, a, b). In all except the charms and drinking cups, the large end of the horn is closed by a carefully fitted wooden stopper, smoothly rounded on the outside. This stopper is held in place by small pins of horn or bone, cut off flush with the outer surface. Similar pins are sometimes used to fasten the bottoms of small wooden boxes.

321 None of my informants knew of any method for softening horn so that it could be twisted and spread, but the small horn boxes could not have been made in any other way. Probably the material was scraped thin and then softened by boiling. Ordinarily the horn is cut into shape with knives, scraped to remove the loose, fibrous surface, and then rubbed smooth with some abrasive. Lastly, it is oiled and polished. The final polishing is done with leaves which contain crystals of silica. Horn objects are nearly always well made and often show a fine, glossy finish.

Bone is used even less than horn. Snuff bottles are sometimes made from sections of long bones with wooden stoppers fixed in the

ends (Fig. 9, k). Bodkin-like bone points are used as head scratchers and also to disentangle the warp in weaving (Fig. 14, g). Women often carry them thrust into their hair, but they are not ornaments and are rarely decorated. Other long bone points are occasionally used as meat forks. The jawbones of oxen are often used in mat making, to smooth and polish the fabric (Fig. 12, g). 321 [413]

Bone is shaped with knives while still fresh and polished like horn. Both horn and bone objects are sometimes decorated with series of small incised circles, each circle having a dot in the center. These are made with a slender, forked, iron drill which is shaped like a heavy needle with the tip of the eye broken off. The drill is set in a wooden shaft about a foot long. The shaft is twirled between the palms. One point of the drill makes the central dot, while the other revolves about it and incises the circle. When on bone, the circles are usually rubbed with soot, to heighten the effect. [531] [413]

Hide is used for sandals, thongs, a few pouches and knife sheaths, and for skull caps. Of these, only the sandals are common. There is no tanning of any sort. The hide is roughly fleshed with a small knife, but the hair is usually left on. Sandal soles are cut from dry rawhide, the flesh side being worn next the foot. Thongs for attachment pass through holes in the edges of the sole and are knotted beneath (Fig. 11, b). Caps are made from the skin of an ox hump, dried over a form (Fig. 11, h). Pouches are usually rectangular, like boxes. They are made by drawing the fresh hide over a block of wood, folding it, and sewing the ends together. When it has dried, the block is removed but the stiffness of the hide keeps it in shape (Fig. 11, a, d). Knife sheaths are made in the same way. 281 [291]

The Zafimaniry occasionally tooled their knife sheaths and small pouches. The hide was first dried, then soaked in water until the hair could be rubbed off with the fingers. It was then bent over a wooden form, flesh side in, and sewed. Lastly, designs were pressed into the surface with a blunt point of hard wood or bone. A pouch and sheath decorated in this way are illustrated (Figs. 5, a; 11, g). The sheath may be of Betsileo manufacture. This type of decoration is now obsolete. 281 531

MATting AND BASKETRY

Mats and baskets are the commonest of all Tanala manufactures. Every woman is expected to make those used by her own household. A bride spends the month before her marriage in making a supply, including one especially fine mat which she presents to her parents. 285 462

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next. Mats of palm leaves are the handsomest, as they are almost white with a glossy surface, but they do not wear well. Floor mats, etc., are always woven as a whole, not made from pieces sewn together, as among some other Madagascar tribes. 285

At least 80 per cent of the hard mats are undecorated. The commonest decoration consists of a line of broader twilling running around the mat 2 to 4 inches from its edges and parallel with them. When there is further decoration, the space inside this border is divided into a series of squares which are separated by bands of wide twilling. The twilling within each square differs from that of the adjoining squares, the various types of twilling being arranged symmetrically (Fig. 12, d). The designs are not named and have no special significance. They are of the simplest geometric type and there are no attempts to reproduce natural forms. At the present time a few colored mats are made, but these are a recent development and the dyes are always anilines. In many cases the colored patterns are nothing more than diagonal strips which intersect at various points, the woven designs running across them unbroken. 295 531

Soft mats are made principally by the southern Tanala, who employ them as a substitute for cloth. They are identical with those used by the southeast coast tribes and may have been introduced from that region. They are woven from various tough sedges, *harefo* and *herana* being the best. In some localities these are cultivated in flooded beds, like rice. The leaves are very dark green, tubular, like garlic, and grow 18 inches to 2 feet high. They are harvested when the tips begin to turn yellow, rolled in powdered kaolin until thoroughly coated, then spread out on mats in the sun. When nearly dry, they are made up into bundles about 2 inches in diameter and beaten with a cylindrical wooden mallet or rice pestle until they become soft and pliable. They are never split. 285 [171] [248]

The technique of weaving is the same as for the hard mats, except that the soft mats are usually woven in strips not over 18 inches wide. These are later sewn together to form blankets and garments. The best ones are made from small stems and are so closely woven that they resemble coarse canvas. They are rarely decorated. After weaving, the mat is taken to running water, kneaded and worked under water with the feet, to make it more pliable.

All Tanala basketry is of the hand-woven type.¹ Coiled basketry is unknown and its general distribution in Madagascar suggests that it has been introduced from Africa in relatively recent times. 285 174

¹The classifications used are those of Otis T. Mason, *Aboriginal American Basketry*, Report of U. S. National Museum, 1902.

285 along the sides by means of draw strings threaded through the
352 binding. Small separate squares of matting are inserted under the edges of the band, forming the ends of the stool. When first made, these stools are nearly spherical (Fig. 13, b).

● [53] Pouches and stools are sometimes decorated with simple woven designs like those used on mats, but the bulk of Tanala basketry is devoid of ornament and rather coarsely woven.

285 Baskets of wicker work and open weave are made exclusively by
[224] men. The material is a tough, flexible vine called *vahy*. This is split and flattened. Wicker work baskets are extremely rare, only one specimen being collected. This is a small, cylindrical, covered basket identical with those manufactured by some of the southeast coast tribes and was probably made in imitation of these (Fig. 13, d). The members run vertically and horizontally.

[226] Wicker work technique is regularly employed for one type of fish scoop. This has the form of a half cylinder, the rigid vertical elements of the wicker work running crosswise. The flat ends of the scoop are formed by bending the longitudinal splints inward and fastening them together with rough twined work in bark (Fig. 3, b). Wicker work technique is also used for house doors, the material being split bamboo, and for small open frames used for smoking fish.

In the technique which I have called open weave, the foundation consists of two series of parallel, diagonal members intersecting at regular intervals. Horizontal members are woven over and under these immediately above each intersection (Fig. 13, c). The finished fabric has large six-sided meshes. This technique is employed for deep, narrow, oblong baskets, one of which is to be found in nearly every household (Fig. 13, f). It is hung up beside the fireplace and utensils are dropped into it after washing, the open meshes allowing them to drain and dry quickly. Because of their stiffness, such baskets are also used for storing eggs and other breakables. The same technique is used for the close-fitting, semi-rigid network woven about gourds used for storing grease (Fig. 13, e), and in the manufacture of a large heart-shaped type of fish trap (Fig. 3, d).

[171] It seems to be almost universal in Indonesia and may have been brought to Madagascar from that region.

285 Twined work is employed in the manufacture of fish traps, eel
226 cages, fish scoops and hanging platforms, but never for real baskets. The traps are conical or bottle shaped and the cages cylindrical. They are made from closely spaced, lengthwise strips of bamboo, about $\frac{1}{2}$ inch wide. At intervals of 5 to 8 inches these strips are

286 arm, around the vertical stick, over the other arm, and back, new lengths being knotted on as needed. The other frame consists of a plank with two rows of holes into which pegs about 8 inches long are fitted. The arrangement of the pegs can be changed to give hanks of different lengths (Fig. 14, f). When enough of the filaments have been knotted on, the hank is removed and laid aside to be dyed. The plateau method of boiling raffia with lye and then twisting it into thread seems to be unknown.

386
[177] At the present time European aniline dyes have almost supplanted the original vegetable colors in raffia weaving and only a few of the older women know the native processes. Black is made by crushing the leaves of the *lalona*, boiling them and adding ferruginous earth. 824 When the mixture is cold the raffia is put in and soaked for a day. This gives a fine and very fast color which continues in regular use in spite of the imported dyes. Yellow is made with turmeric. The root is pounded in a mortar, mixed with cold water, and the raffia steeped in it for half a day to a day, according to the depth of color desired. It is then washed in running water and dried. This dye is still occasionally used. A good orange dye was formerly made from the roots of the *vazavaritra*, a bush or small tree. The bark from the roots was pounded to powder in a mortar and boiled for an hour with the raffia, which was then washed. This dye was never used with *hafotra*, but simply because the plant grows in the territory of the raffia weaving gentes and sparsely if at all in that of the Zafimaniry. Red was made by boiling the raffia with the bark of the *nato* tree, and a pale grayish blue was made with indigo. The *vazavaritra*, *nato*, and indigo dyes are rarely used today. All dyeing is done before the fabric is woven.

286 The Tanala make a very limited use of differential warp dyeing. 531 After the chain is ready for the loom groups of threads are drawn together and tightly wrapped with raffia. The chain is then dyed, the exposed portions taking the color while the others remain uncolored. Stripes with alternate plain and colored sections are made in this way, but there are no real designs and dyeing with several colors is unknown. The technique is rarely used and only one example was collected. Threads of mixed color are made by twisting together two filaments dyed in different colors, as black and yellow.

286 The loom (*tenona*) used in raffia weaving is identical with the oldest Betsimisaraka type (Fig. 15, a). The modern Betsimisaraka type, with treadles, is unknown. The warp is laid on the loom continuously, passing round and round both beams. Tension is secured

286 by tying the beams at their ends to four low posts set in the ground. Beams and heddle rod are round and the heddle rod is relatively heavy. The leash, made from untwisted raffia, is continuous. It is wound around the heddle rod and a second much smaller rod which rests on the top of the heddle rod, in a series of figure eights (Fig. 15, b). The shed stick is oblong in section and about twice as wide as it is thick. Laze rods, made from two strips of bamboo fastened at the ends with a single turn of raffia fiber, are inserted about 18 inches beyond the shed stick, being moved along as the work progresses. The shuttle is very long, in some cases almost the width of the loom, and has forked ends (Fig. 15, c). It is usually of wood, but sometimes of bamboo. The weft thread is wound on it spirally, making either one or two complete turns between the ends. The sword is a long, straight-edged piece of wood pointed at one end and straight at the other (Fig. 15, d). The weaver squats behind the breast beam. Either three or four laze rods are first inserted and pushed close together, to give resistance to the sword. The heddle rod is then raised to form the shed. When in this position its ends are supported on short rests, usually made from stalks of manioc with a few root stubs left attached. When the shuttle has been thrown and the thread beaten in, the heddle rod is slipped off the rests, and the shed stick is turned to form the counter shed. A small, pointed piece of bone or wood is drawn rapidly back and forth across the warp to separate odd and even threads (Fig. 14, g). Both shuttle and sword are inserted from the right side. When a section of cloth has been woven, it is wound backward over the breast beam, gradually passing along the bottom of the loom and up over the warp beam. The laze rods inserted to give resistance are left in place until the cloth is finished. When all but a few inches of the warp has been woven, the remaining portion is cut across and the cloth removed.

286
531 Nearly all Tanala raffia cloths are decorated with simple stripes made by introducing bands of different-colored thread into the warp. The weft is of uniform color and usually undyed. Checked patterns are produced by having bands of the same colors in both the warp and weft. They are rather rare and do not appear to be ancient. At the present time the most prized cloths are made with a warp of dyed raffia, usually black with colored stripes, and a weft of commercial cotton thread. A few bands of the same thread are often introduced into the warp to give clear white stripes. The stripes are commonly arranged in such a way as to give a border along

286 one edge of the fabric. When the cloth is to be made into a woman's
531 dress, the long strip which has come from the loom is cut in two and the ends of each half sewn together. The plain edges of the two sections are then sewn and the border appears at the top and bottom of the simple tubular garment.

283 *Hafotra* is a bast obtained from three different species of trees.
[824] All the Madagascar tribes use it for cordage, but its use for cloth is now limited to the Tanala and some of the neighboring Betsileo. The Imerina and Bara also made *hafotra* cloth in early times. The best *hafotra* is obtained from the *hafotra potsy*, inferior grades from the *hafotra keoka* and *hafotra ambany akondro*. *Hafotra potsy* is cream colored when prepared, the other varieties light gray. Trees 2 to 3 inches in diameter are cut into 4-foot lengths and the hard outer bark scraped away. The inner bark is then split lengthwise and taken off in a single sheet. This is done by men. The sheets of bark are taken to the village, where the women split them into ribbons about $\frac{1}{2}$ inch wide. The bark is then boiled with water and wood ashes for about two hours and the mixture left standing for a day. It is then washed in running water and, while still wet, is picked into fibers suitable for thread. After this it is washed again, being kneaded on stones with the feet. It is wrung out and dried for a day in the house, never in the sun. A bundle of the still damp fiber is then hung on a hook or threaded through the links of a wooden chain (Fig. 16, e). The operator seats herself on the ground or on a low stool and bares her right thigh. The bundle of fiber is hung beside her, at about the level of her head. She draws down the fibers one by one and rolls them between the palm and the thigh, knotting on new fibers as needed. The finished thread is wrapped around two sticks set in the ground about 2 feet apart. When enough has been rolled to make a hank, it is removed from the sticks and laid aside to be dyed.

386 Even at the present time, only vegetable dyes are used for *hafotra*. The favorite color is blue, *engitra*, which is made as follows: Indigo is pounded to powder in a mortar and dried. Banana stalks and a plant called *ambiaty* are also pounded and dried, then mixed with dried grass of the variety called *tsipontina* and the whole burned to ashes. The ash and powdered indigo are thoroughly mixed in hot but not boiling water. The yarn is put in and left over night, while the mixture cools. It is taken out, wrung dry, then put in again and left for a day. After this it is washed in running water and dried in the house, never in the sun. The same solution is used

286 the weft is always dyed red. The only variations from the pattern
291 which were seen were several specimens made entirely of undyed
hafotra and a single specimen which had four widely spaced stripes
of combined blue and yellow on a ground of natural color.

531 The Tanala, like most of the Madagascar tribes, display extraor-
286 dinarily good taste in the combination of colors. Even when glaring
aniline dyes are used their compositions are almost always pleasing. The outstanding feature of their textile design is the use of narrow lines at the edges or in the body of their stripes. If the stripe and ground are both fairly light in color, the stripe will be edged with a black or very dark line. A wide dark stripe will have a few lines of light color incorporated. These lines are invisible at a little distance but give emphasis to the whole. Delicate shadings are also produced by lines of graded color. In one specimen a stripe is composed of three yellow threads in the center with two black threads, two dark blue, two light blue, two red and two white on either side.

CORDAGE

283 The best native material for cordage is raffia. Long ribbons of this fiber, just as it is striped from the leaf, are used for all the purposes for which we employ light string. Heavier cord is made from twisted raffia in two strands. The strands are rolled between the palm and the bare thigh, the maker rolling first one strand and then the other and allowing the two to twist about each other. New lengths of fiber are rolled in as needed and the work proceeds with great rapidity. Heavier rope is usually braided from bundles of the untwisted fiber in a three-strand plait. Rope an inch in diameter can be made in this way. It is soft, light and extremely strong, but is rarely used at present because of the commercial value of the raffia.

[824] Inferior rope and cordage are made from the inner bark of various trees, called *hafotra*. The use of this material in weaving has already been described. In rope making the fiber is boiled, shredded and cut into pieces 4 feet long. The rope is braided in three-strand plaits from bundles of these. New pieces are introduced a few at a time, so as to keep the rope of uniform size and strength. *Hafotra* ropes are light and soft, but do not wear well. Small cordage is rarely made from it.

Strips of fresh bark are frequently used in place of string. Permanent lashings are usually made from split vines, while large vines

354 The fireplace is southwest of the center post. It is always far enough away from the walls so that it can be approached from all sides. It is rectangular, about 3 feet on a side, and is depressed 2 to 3 inches below the floor level. It is surrounded by small slabs of stone set on edge. One or more tripods, made from slender stones planted in the earth, serve to support the cooking pots. Among the Betsileo these stones are sometimes carefully shaped, but all those seen among the Zafimaniry were rough.

352 Along the southern wall there are commonly one or more hanging shelves loaded with utensils, baskets, etc. On the center post, or on the wall opposite the entrance, a small openwork basket for spoons is hung. In the southeast corner there is usually a wooden chest. In front of this is a stand for a water jar. This is usually made from a small tree with its branches lopped to form a support for the jar. It is about 18 inches high.

Against the west wall, to the left of the entrance and filling the rest of that side of the house, is the bed (Fig. 19, d). This is a huge wooden structure, resembling a wardrobe. It is built in permanently, the walls of the house forming the back and southern end. The front and northern end are nearly as high as the house wall. The top is open. The inner walls of the bed are constructed of grooved lumber, like the house walls. There are longitudinal beams halfway up. In the center of the east side there are two doors, one above, the other below. The lower half of the bed is used for storage, setting hens, etc., the upper half for sleeping. The bed itself is made of split bamboos or saplings laid longitudinally, with grass and mats on top. At night, the father and mother of the family retire into this structure and shut the door. Everyone else sleeps on mats laid on the floor.

[53] The beds are usually carved.

The Zafimaniry use matting stools, like the other Tanala, but have in addition well-made wooden stools, usually with three legs (Fig. 19, b). These are carved from a section of log. I never saw [422] more than one wooden stool in a house. This stool is the property of the father and no one else can use it while he is present.

356 The Zafimaniry houses are well suited to their environment, for the winter season in their territory is cold, with chilling fogs, but they are poorly kept. The floors are rarely swept and spilled food, etc., is simply trodden in. When the floor mats become too soiled, new ones are laid down on top, the floor itself being of earth. In one house I counted sixteen layers of mats, each with its accumu-

291 draw string, so that the crown juts out above it (Fig. 21, d). In still another type, a narrow strip is sewn in between the flat crown and the band.

I was unable to trace the distribution of these various types of cap. The skull caps of soft sedge seem to be more popular with the Ikongo than the more elaborate forms, but I am under the impression that all the forms are used by all the Tanala gentes except the Zafimaniry. The one-piece caps are usually worn by men and the composite forms by women. Among the eastern gentes, who are in contact with the Betsimisaraka, women's caps are usually decorated with woven colored designs similar to those used on mats, but finer and more elaborate. Elsewhere, they are usually plain. Men's caps are rarely colored, but are usually embroidered with dyed raffia or *hafotra* in simple geometric designs (Fig. 21, a, b).

• [531] The main garment of Tanala women is a straight, tubular dress, like a sack open at both ends. This is large enough to be easily slipped on over the head and long enough to reach from the armpits to about 3 inches below the knee. It is held in place by a narrow belt. The fabric is so stiff that the upper part stands up and covers the body. When working in the fields, the upper part is folded back over the belt and hangs like an overskirt. In rainy weather, the belt is removed, and the whole garment pulled up until the upper part covers the head like a hood (Fig. 20, j).

The mat dresses of the Ikongo are made from two or three cylindrical sections sewn edge to edge (Fig. 20, c). The construction of the raffia dresses of the Menabe (Fig. 16, d) has been described under Manufacture of Cloth. In both cases, the belts are narrow bands of bark cloth or commercial fabric tied in front. They are not decorated.

Married women usually have the breasts bare. In the presence of strangers they draw up their dresses and hold the upper edges under their arms. Unmarried women and girls wear short, tight-fitting, sleeveless jackets of commercial cloth, or brassieres. The jackets are probably due to Arab influence. The ordinary brassieres are plain strips of soft matting 3 to 6 inches wide. Those worn on dress occasions are made in two parts, a broad strip, tapering slightly toward the ends, which is shaped to fit and support the breasts, and a narrower strip, often of very fine weave, which goes across the back (Fig. 22, b).

291 An important article of clothing for women is the baby cover.
855 This is a square mat, about 18 inches across, which is worn hanging

777 wooden boxes with or without covers. Small rectangular boxes are also used and there are a few fantastic shapes, like the coffin model shown in Fig. 23, f. This is a charm for success in wrestling and the shape of the box may be significant. Some of the larger charms for general good fortune, which are kept in the dwelling, are put up in finely woven covered baskets. Horn containers, which are very common among the southern and western tribes, are rarely used here (Fig. 23, e). Such containers may be decorated with a band of bead work around the larger end, but this is purely for ornament.

777 Few formulae for charms were obtained. They have to be bought
824 individually, often at exorbitant prices, and there is no way of checking on their authenticity. One *ody basy* (charm to protect against gunshot wounds) is made by placing together pieces of wood from the following trees or bushes: (1) *Tsihabeza*, tree, virtues not defined. (2) *Vahita*, a vigorously growing bush. This gives strength and vitality. (3) *Anivo*, a species of palm with hard wood. Gives the person a hard surface. (4) *Berano* (lit. "much water"), a plant. This turns the enemy's bullets to water as they leave the gun. (5) *Tsilaitra* (lit. "impenetrable"), a tree. This makes invulnerable. (6) *Vahimavany* (lit. "brave creeper"), a vine. This makes brave. (7) *Kelimitany* (lit. "little brave"), a small tree. This makes brave. (8) *Famehilefona*, a tree. This protects from spears. (9) *Famakibady* (lit. "gun breaker"), a cree. This will cause the enemies' guns to explode. The substances are gathered and combined without any spell or ceremony and put in a container of wood or horn. They are usually soaked with grease or honey, but this is not necessary.

754 A charm used for killing an enemy is more complicated. Take
777 a root from the west side of the *arongana* ("poinsettia") plant and one
[824] from the east side of the *hazodinga* (a plant). Take the end of an aerial root of the *tsirikomby* (a large tree, apparently of the fig family) just before it touches the ground, also a root of the *longoza* (a large-leaved plant like a caladium, growing in water) before it touches the water. Add to these a small insect called *sakodiavatra* [825] which lives in rotten wood. Pound the materials together in a mortar and fill the shell of a fresh-water snail with the mixture. The person who wishes to use this charm takes it and seven grains of rice, which have been husked by hand, and goes to a new tomb, usually at night. He makes a hole in the earth at the head of the tomb and names the person to be killed. He then waits until he hears any animal cry. After this he places the charm and the seven

XI. ART

531 The art of the Malagasy, although nowhere very rich or varied,
171 is pure art, in the sense that it is inspired entirely by aesthetic considerations. Aside from a few naturalistic carvings used as memorials to the dead, for magical purposes, or as decorations on containers for charms, their art products seem to have no religious or magical connotations. Even the Sihanaka, who have developed and named a variety of elaborate mat designs, claim that the purpose of such designs is purely decorative. In most tribes the designs are not named and no significance is attached to them.

Some tribes even go a step farther in aesthetic expression and make art objects which serve no utilitarian purpose. Thus the Sakalava manufacture small baskets of fantastic shapes, mats and fans embroidered with raffia, etc., which are never used, but which hang on the walls of the dwellings much like pictures in our own houses. The tribes of the far south take delight in elaborately decorated baskets and keep many empty ones standing on their shelves. The Sihanaka weave amusing figures of men and animals from papyrus and carve small paddles which the men carry as a part of full dress, like swagger sticks. The Bara even carve small images of men and animals which are pure bric-a-brac and take delight in deliberate caricatures, especially of unpopular white officials.

517 In contrast with these art loving tribes, the Tanala, with the
531 single exception of the Zafimaniry gens, seem to have very little aesthetic sense. The little that they have expresses itself in good craftsmanship rather than decoration. Their houses, although well built and neatly kept, are severely plain. Their tools and utensils are simple in form and devoid of ornament. Cloth, where woven, is decorated with plain stripes and even their mats and baskets are, for the most part, undecorated. Only wood carving shows any development, and that only among the Zafimaniry.

322 Until about twenty years ago the only Tanala who did any
531 wood carving were the Zafimaniry gens of the Menabe. Individuals in other gentes sometimes scratched zigzag lines on the handles of ladles and cut the handles of their spoons into ornamental outlines (Fig. 7. a, b) but such decoration was exceptional. In recent years there has been an increase in wood carving. At present there are a few semi-professional carvers among the Ikongo. These men have learned the art from the Bara. Their work consists, for the most

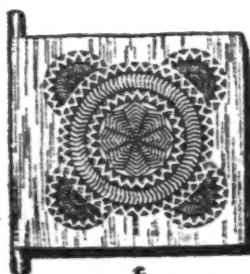
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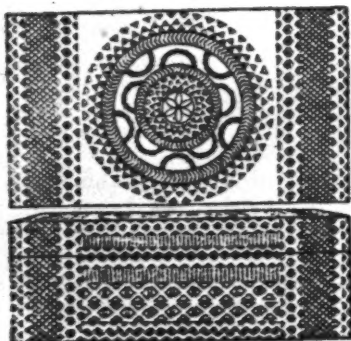
a



c



d



e



f

FIG. 22. Carved Boxes. a, Cross hatched Box; b, Small Carved Box; c, Smoke Hole Shutter; d, Plain Wooden Box; e, Carved Oblong Box; f, Large Oval Box, Old.

531 part, or small figurines of men and animals which are made for sale
322 to Europeans, and is indistinguishable from that of the Bara.

Among the Menabe, other than the Zafimaniry, there are no professional carvers. However, men who make large ladles for sale now decorate the handles of these with simple designs. The handle is first blackened for a few inches above the bowl. This may be done either by searing the wood with a red-hot iron and then rubbing the charred surface with a rag dipped in grease, or simply by rubbing with a mixture of grease and soot. The designs are then cut through this black layer, exposing the lighter wood beneath. They are large and very simple. They consist of bands, spots, etc., symmetrically arranged (Fig. 7, d). The carving is so shallow that when the black color has disappeared through use it is often difficult to tell whether the ladle has been decorated or not. I could not trace the origin of this type of decoration, but it is said to be a recent development. It may have been borrowed from either the Bara or the tribes of the southeast coast, both of whom use a similar technique. The ladle makers say that it increases the salability of their wares.

[439] The Zafimaniry are excellent wood carvers and, in former times, decorated their houses, beds, and some of their wooden utensils with beautiful and rather complicated designs. At the present time wooden houses and the large enclosed beds (see Dwellings) are obsolete, but the carving of utensils is still common. Zafimaniry carvings are in demand with Europeans and civilized natives and they have recently begun to produce objects of new types, especially folding tables and purely ornamental boxes. The latter are rectangular, a shape unknown in ancient times (Figs. 32, e; 33, c; 34, a), or graceful modifications of the comb-topped type formerly used for tinder boxes (Fig. 33, a, b). At the time of my visit there was even a small factory at Ambositra, where several Zafimaniry carvers worked under the direction of the [177] Imerina owner. The products of this factory were marketed in the capital. Although the carvings made for sale are technically inferior to the old work and rarely show the more complicated designs, there has been little European influence on the art itself. In over a hundred specimens which I examined I could not detect a single European motif.

322 The Zafimaniry say that their art of carving was already fully
173 developed when they entered the Tanala territory from the plateau.
531 However, they have certain stories in regard to its development which probably contain much truth. They say that, in the earliest times, they did not carve designs but decorated their wooden objects

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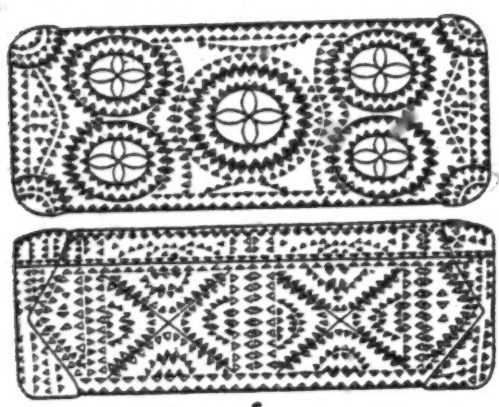
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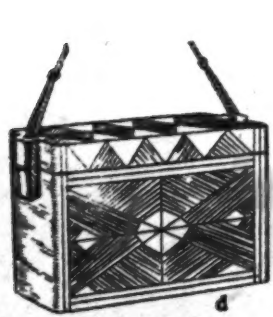
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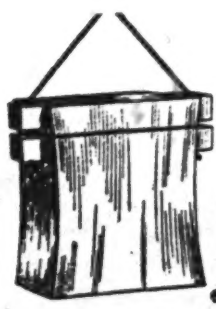
b



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d



e

FIG. 22. Carved Boxes. a, b, c, Modern Carved Boxes; d, Old Carved Box; e, Flat, Rectangular Box.

322 by means of a fluted plane (Fig. 11, e, f).¹ This plane gave a series of
 531 shallow, parallel grooves. By changing the direction of the planing
 173 it was possible to produce cross hatching with the lines either diagonal
 or at right angles. The fluted plane decoration has only become
 obsolete in the last fifteen or twenty years. An example of it is shown
 in Fig. 32, a. The same effects are now produced with a very narrow
 gouge (Fig. 10, j). This is more laborious but gives much greater
 precision.

[177] The earliest instrument used for carving designs was a small knife
 of the ordinary type (Fig. 1, f). At the present time this has been
 almost completely replaced by small chisels, usually of European
 origin. Most of these are straight edged, but turners' chisels, with
 a slanting edge, are just beginning to come into use. Both chisels
 and gouges are used without a mallet. The tools are usually held
 and used in European fashion, but it seemed to me that the carvers
 worked toward their bodies rather more than white artisans would
 have done.

322 All the old Zafimaniry carvings are made on hard wood. Soft
 531 woods are now beginning to be used, but only for export pieces. The
 surface of the wood is never blackened. Before the carving begins,
 the surface is smoothed and given a dull polish. Commercial sand-
 paper is now used for this even in remote districts. The ancient
 carvers worked free hand, carrying the design in their minds, but at
 present practically all of them sketch in the designs in pencil. This
 is done to save time. Formerly, large circles and arcs were outlined
 with an iron point attached to a piece of cord while smaller ones were
 [177] carved free hand. At present, European compasses are in almost
 universal use.

The Zafimaniry do no carving in the round or even in modeled
 relief. The decoration follows the contour of the object exactly and
 the carving appears flat, due to a complete absence of curved surfaces.
 The designs are worked out by a combination of very shallow and
 moderately deep cuts with no intermediate levels. The shallow cuts
 are a sixteenth of an inch or less deep and are made with a gouge
 or the point of a knife. I saw only one instance in which the gouge
 had been used to outline a curve. Apparently the limitation of its
 use to straight lines is not due to lack of skill, for the carvers readily
 made curves with it on request, but to the fact that it is a substitute
 for the fluted plane. The latter could only be used for straight lines
 and the convention thus established has persisted. The knife is used
 for outlining circles and curves. Such outlines are usually simple

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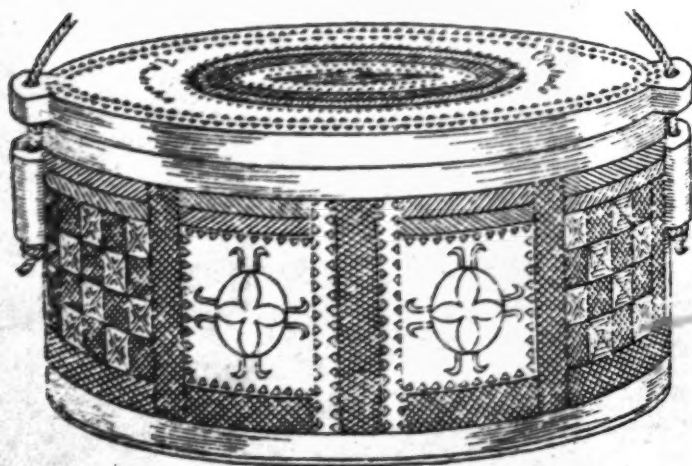
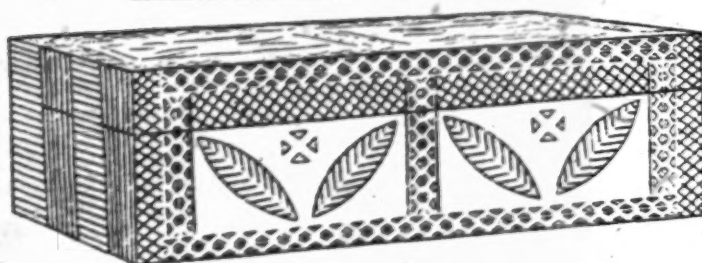
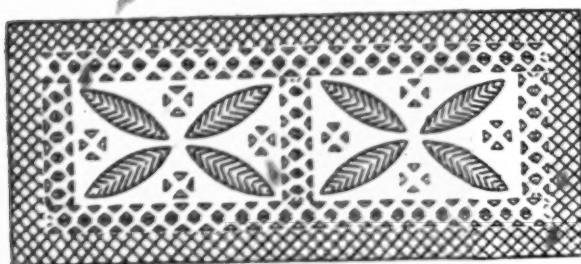


FIG. 34. Carved Boxes. a, Modern Box, Side and Lid; b, Old Storage Box.

322 incisions, with none of the wood cut away. When wood is removed,
531 the knife cuts are rectangular in section, with flat bottoms and straight sides.

Deep cuts are made with the chisel or, rarely, the knife. They are commonly in the form of small triangles, as in European chip carving. In making these cuts, the chisel is pressed into the wood vertically on two sides of the triangle and a chip removed by a sloping cut from the third side. The bottom of the cut thus slopes downward from the base of the triangle to its apex. The triangles are always intended to be equilateral. Crescents, ovals and circles are also deeply cut. In these figures, one side of the cut is always vertical and the other sloping. In circles it seems to be a common practice to cut away the interior in such a way as to leave a series of ridges radiating from the center to the circumference.

517 The Tanala have no appreciation of the aesthetic value of plain
531 surfaces. The whole of a decorated object will be covered with carving and no large uncarved spaces are left even within designs. This tendency to over-elaboration is carried so far that in curved figures of any size the wide, sloping side of the cut is usually fluted with shallow parallel lines. In arranging the designs, the surface to be decorated is treated as a whole or, if very large, it is divided into a few balanced panels. Unity is maintained by the use of borders. Within the border, the surface is divided into smaller sections of balanced arrangement or, if the main design is curvilinear, it may be treated as a unit. If the area within the border is treated in several sections, these are usually divided off by bands of different design. The designs in each section are selected with regard to the whole pattern, so that good balance is maintained.

The designs are built up by the combination of a few simple elements. Those of most frequent occurrence are various combinations of parallel straight lines including simple parallel lines, arranged either horizontally, vertically or diagonally with regard to the design unit, cross hatching and herringbone patterns. These elements are used mainly in borders and bands between sections of design, but may also be used to fill details of large designs.

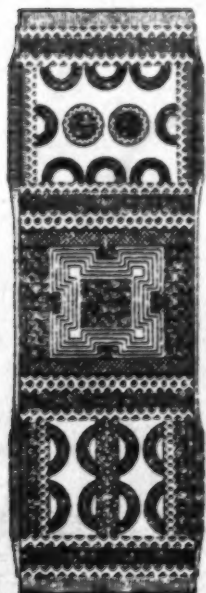
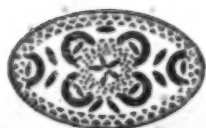
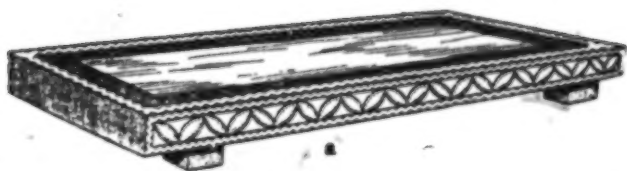
Almost as frequent as the parallel line combinations is a series of motifs built up from combinations of small triangles. These include simple toothed lines, zigzags, X-shaped figures and diamonds. These motifs are usually used in bands and borders, but the X figures and diamonds are sometimes employed for fill.

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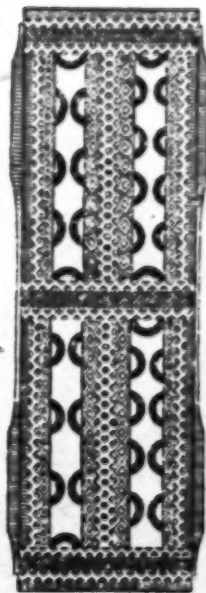
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b



c

FIG. 35. Stool and Box. a, Carved Stool; b, c, Modern Carved Honey Box.

531 Curved elements of design are used much less than straight and triangular ones. All the curves used in carving are arcs of circles. No irregular curves were seen and only one spiral, the latter on an object whose Tanala origin was questionable. Crescents are used as parts of larger designs, usually in combination with circles, but are rarely the central element in a design. Circles are rarely used except as the central elements of designs. Both circles and crescents are usually concentric. Many of the circle patterns are very elaborate, with a rosette or even a many-pointed star at the center surrounded by zones of other designs (Fig. 32, b, c, e, f). Pointed ovals are made from two shallow arcs intersecting at the ends. They naturally suggest leaf forms and the resemblance is often heightened by fluting the interior. They are used rather more extensively than circles or crescents. In one instance a band of them has been carved on the edge of a stool (Fig. 35, a). Four or six of them, radiating from a common center, give a flower-like form often used as the central element in a section of design (Figs. 32, f; 34, a).

The designs built up from the motifs just described are extremely varied. No two are exact duplicates. Most of them are based on the circle, or on the square, subdivided into a number of rectangles. There is also a limited use of large triangles, with many variations in the motifs used for borders and fill. Two designs deserve especial mention as distinctive in themselves. One of these is a large rectangle with rectangular projections at all corners (Fig. 35, b). This is usually carved with a border of one pattern and a fill of another. The other consists of a circle with eight antennae which are arranged in four pairs. These antennae radiate out from the top, bottom and sides of the figure. This design appears to be ancient and has gone out of use in recent times (Fig. 34, b).

The carved designs have no religious or magical significance and the modern carvers seem to have no names for most of them. The art is inspired entirely by a love of beauty and in the old days each man carved his own belongings in his spare time. Large objects such as houses, beds, etc., might be worked on intermittently for years until the decoration was complete.

531
174 In its technique, Zafimaniry art corresponds closely to that of the Betsileo, but there are several differences in design. The Betsileo rarely if ever use the pointed oval or the floral forms based on it. They make a much more elaborate use of curved figures, including the spiral, and frequently carve outlines of men and animals. These seem to be entirely lacking in the Tanala art. In view of the existing

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similarities and the history of the Zafimaniry it seems probable that the art of both groups was once identical, but that it has diverged in relatively recent times. Betaileo wood carving is practically extinct while Zafimaniry wood carving is still very much alive. The older Zafimaniry carvings resemble the Betaileo ones much more than do the recent examples and I feel that the new work shows a simplification due to mass production. 531 174

The ultimate origin of this art cannot be determined at present. In historic times this particular style of carving was limited to the Betaileo and Zafimaniry, but with suggestions of it among the more negroid tribes to the south and west. Toward the east and north, it died out rapidly. Certain of the Betaileo designs, and the Zafimaniry circle with antennae, have an African flavor, but the chip carving, which is the most important technical element, can hardly be African. It rather suggests some Arab work, yet it appears to be lacking on the southeast coast, the region in which Arab influence was strongest. I know of nothing comparable among the Malays, but certain parallels can be traced between these Zafimaniry carvings and some Polynesian forms, especially the carvings from Samoa and the Cook and Austral groups. Other features of Tanala culture certainly suggest the presence of a culture as much Polynesian as Malayan and it seems possible that both the Polynesian and Zafimaniry styles of carving may be ultimately traceable to some common source.

643 or would not reign long. The ombiasy might change his destiny
 527 by bathing him with water containing magical materials, but he
 787 was sometimes dismissed then and there and another king
 chosen.

643 "The king entered the house by the big door on the east, taking
 527 care to place his left foot on the door sill first. He seated himself
 782 on the eastern side of the house on a clean mat, his counselors on the
 right and his wife on the left. An ox was tied to the *fatora* with its
 head east. [The *fatora* was a pointed post about six feet high, usually
 made of *tez* wood. It was set up east of the royal house to com-
 memorate the ancestors.] The *Anakondriana* left the house. They
 threw water on the roof of the house and on the ox three times, while
 the chief *Anakondriambe* said: 'Oh Zanakary of the east, the south,
 the north and the west, come assist at this ceremony. We have
 chosen one to direct us, to counsel us and to protect us. We offer
 you an ox *lao trafo* [lit. with a long hump, i.e., fat]. We ask your
 protection that our new king may live and reign long, that we may
 be protected from all dangers, that the army of the Imerina may not
 come to our region, that the wild pigs and locusts may not injure
 our plantations, that we may be exempt from all sickness, that our
 women may have many children and that our wealth may be in-
 creased.' After making this invocation the *Anakondriambe* entered
 the house and the young men of *hovu* caste killed the ox and cut up
 the meat. Rice and pieces of the meat were cooked and placed on
 a leaf of the Traveler's Palm or a clean china plate. This was then
 put on a handsome mat before the east door of the house. Every-
 one then uncovered his head and stood silent. The *Anakondriambe*
 advanced and addressed the *razana* [ancestral spirits]. He invited
 all the ancestors of the king to take part in the repast. He explained
 why they had been called, then asked their protection, good fortune
 and prosperity. When the prayer was finished a great quantity of
 rice and meat was cooked and the king offered *toaka* [sugar cane
 rum] to the *Anakondriana*, the singers and dancers. There was a
 great feast. There was a great uproar in the royal house, ending in
 shouts of laughter. The next day the king and his family gave
 two or three cattle to the people. These were killed [not sacrificed]
 and the meat distributed to everyone. The people then returned
 home talking of the incidents of the ceremony."

643 There seems to have been no formal procedure for deposing an
 undesirable king and it was extremely rare in practice. Kings were
 selected with great care and were watched and admonished by the